IN THE CLAIMS

The following claim set replaces all prior versions, and listings, of claims in the application:

1-18 (canceled, without prejudice).

19 (new). A method of controlling an optical crosspoint switch which comprises intersecting input and output waveguides forming an intersection, a first upper waveguide portion which is arranged adjacent to the input waveguide and which extends at least partially along the input waveguide to the intersection, a second upper waveguide portion which is arranged adjacent to the output waveguide and which extends at least partially along the output waveguide from the intersection, and a corner mirror located at the intersection for coupling light signals from the first upper waveguide portion to the second upper waveguide portion, the method comprising the steps of:

in an OFF state of the switch, using an electrical signal varying the refractive index profile of the first and second upper waveguide portion in order to prevent light transfer from occurring between the first and second upper waveguide portion and the input and output waveguides respectively; and

in the OFF state of the switch, using an electrical signal varying the loss/gain characteristics of first and second upper waveguide portions, thereby enhancing the prevention of light transfer between the first and second upper waveguide portions and the input and output waveguides respectively.

20 (new). A method of controlling an optical crosspoint switch which comprises

intersecting input and output waveguides forming an intersection, a first upper waveguide portion which is arranged adjacent to the input waveguide and which extends at least partially along the input waveguide to the intersection, a second upper waveguide portion which is arranged adjacent to the output waveguide and which extends at least partially along the output waveguide from the intersection, and a corner mirror located at the intersection for coupling light signals from the first upper waveguide portion to the second upper waveguide portion, the method comprising the steps of:

in an ON state of the switch, using an electrical signal varying the refractive index profile of the first and second upper waveguide portions in order to enable light transfer to occur between the first and second upper waveguide portions and the input and output waveguides respectively; and

in the ON state of the switch, using an electrical signal, varying the loss/gain characteristics of the first and second upper waveguide portions, thereby enhancing light transfer between the first and second upper waveguides and the input and output waveguide portions respectively.

21 (new). An optical crosspoint switch comprising:

intersecting input and output waveguides forming an intersection;

a first upper waveguide portion arranged adjacent to the input waveguide and extending at least partially along the input waveguide to the intersection;

a second upper waveguide portion arranged adjacent to the output waveguide and extending at least partially along the output waveguide from the intersection; and

a corner mirror located at the intersection for coupling light signals from the first

upper waveguide portion into the second upper waveguide portion, said input and output waveguides or the first and second upper waveguide portions being made of a material having characteristics such that application of an electrical signal thereto causes variation of the loss/gain characteristics and refractive index profile thereof.

22 (new). A switch as claimed in claim 21, wherein increases in the electrical signal cause increases in loss of the input and output waveguides or of the first and second upper waveguides.

23 (new). A switch as claimed in claim 21, wherein increases in the electrical signal cause increases in gain of the input and output waveguides or of the first and second upper waveguides.

24 (new). A switch as claimed in claim 21, wherein the input and output waveguides intersect at an angle of substantially 90 degrees.

25 (new). A switch claimed in claim 21, wherein the first and second upper waveguides are of the same width as the input and output waveguides respectively.

26 (new). A switch as claimed in claim 21, wherein the first and second upper waveguides are not of the same thickness as the input and output waveguides respectively.

27 (new). A switch structure as claimed in claim 21, wherein the first and second upper waveguides are of the same thickness as the input and output waveguides respectively.

28 (new). A switch as claimed in claim 21, wherein the axis of the first and second upper waveguides are centered above the axis of the input and output waveguides respectively.

29 (new). A switch as claimed in claim 21, wherein the axis of the first and second upper waveguides are not centered above the axis of the input and output waveguides respectively.

30 (new). A switch as claimed in claim 21, wherein the first and second upper waveguides are not of constant width and thickness.

31 (new). A switch as claimed in claim 21, wherein the input and output waveguides are not of constant width and thickness.

32 (new). A switch as claimed in claim 21, formed on a substrate material which is substantially planar.

33 (new). A switch as claimed in claim 21, wherein the input and output waveguides are terminated by end facets that are not perpendicular to the waveguide

axis.

34 (new). An array of switches each switch being as claimed in claim 21.

35 (new). An array of switches as claimed in claim 34, wherein the input and output waveguides have tapered ends to enhance coupling between the array and an optical fiber.